

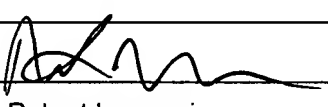
**TRANSMITTAL  
FORM**(To be used for all correspondence  
after initial filing)

|                      |                   |
|----------------------|-------------------|
| Application Number   | 09/997,995        |
| Filing Date          | November 30, 2001 |
| First Named Inventor | Giovanni Frezza   |
| Art Unit             | 2811              |
| Examiner Name        | Ori Nadav         |
| Attorney Docket No.  | 856063.722        |

**ENCLOSURES (check all that apply)**

- |   |   |  |
|---|---|--|
| <input checked="" type="checkbox"/> Fee Transmittal Form<br><input checked="" type="checkbox"/> Fee Attached<br><input type="checkbox"/> Amendment/Response<br><input type="checkbox"/> After Final<br><input type="checkbox"/> Affidavits/declaration(s)<br><input type="checkbox"/> Extension of Time Request<br><input type="checkbox"/> Express Abandonment Request<br><input type="checkbox"/> Information Disclosure Statement and Transmittal<br><input type="checkbox"/> Cited References<br><input type="checkbox"/> Certified Copy of Priority Document(s)<br><input type="checkbox"/> Response to Missing Parts under 37 CFR 1.52 or 1.53<br><input type="checkbox"/> Response to Missing Parts/Incomplete Application | <input type="checkbox"/> Drawing(s)<br><input type="checkbox"/> Request for Corrected Filing Receipt<br><input type="checkbox"/> Licensing-related Papers<br><input type="checkbox"/> Petition<br><input type="checkbox"/> Petition to Convert to a Provisional Application<br><input type="checkbox"/> Power of Attorney, Revocation, Change of Correspondence Address<br><input type="checkbox"/> Declaration<br><input type="checkbox"/> Statement under 37 CFR 3.73(b)<br><input type="checkbox"/> Terminal Disclaimer<br><input type="checkbox"/> Request for Refund<br><input type="checkbox"/> CD, Number of CD(s) _____<br><input type="checkbox"/> Landscape Table on CD | <input type="checkbox"/> After Allowance Communication to TC<br><input type="checkbox"/> Appeal Communication to Board of Appeals and Interferences<br><input checked="" type="checkbox"/> Appeal Communication to TC ( <i>Appeal Notice, Brief, Reply Brief</i> )<br><input type="checkbox"/> Proprietary Information<br><input type="checkbox"/> Status Letter<br><input checked="" type="checkbox"/> Return Receipt Postcard<br><input type="checkbox"/> Other Enclosure(s) ( <i>please identify below</i> ):<br>_____<br>_____<br>_____<br>_____ |
|---|---|--|

**Remarks****SIGNATURE OF APPLICANT, ATTORNEY, OR AGENT**

|              |   |                 |        |
|--------------|---|-----------------|--------|
| Firm Name    | Seed Intellectual Property Law Group PLLC   | Customer Number | 38106  |
| Signature    |  |                 |        |
| Printed Name | Robert Iannucci   |                 |        |
| Date         | October 9, 2007   | Reg. No.        | 33,514 |

**CERTIFICATE OF TRANSMISSION/MAILING**

I hereby certify that this correspondence is being facsimile transmitted to the USPTO or deposited with the United States Postal Service with sufficient postage as first class mail in an envelope addressed to: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450 on the date shown below.

|                       |  |       |
|-----------------------|--|-------|
| Signature             |  |       |
| Typed or printed name |  | Date: |

Fees pursuant to the Consolidated Appropriations Act, 2005 (H.R. 4818).

**Complete if Known****FEE TRANSMITTAL**

OCT 09 2007

**For FY 2008**

|                      |                   |
|----------------------|-------------------|
| Application Number   | 09/997,995        |
| Filing Date          | November 30, 2001 |
| First Named Inventor | Giovanni Frezza   |
| Examiner Name        | Ori Nadav         |
| Art Unit             | 2811              |
| Attorney Docket No.  | 856063.722        |

☐ Applicant claims small entity status. See 37 CFR 1.27**TOTAL AMOUNT OF PAYMENT (\$10)****METHOD OF PAYMENT (check all that apply)**☒ Check ☐ Credit Card ☐ Money Order ☐ Other (please identify): \_\_\_\_\_☒ Deposit Account Deposit Account Number: 19-1090 Deposit Account Name: Seed IP Law Group PLLC

For the above-identified deposit account, the Director is hereby authorized to: (check all that apply)

☐ Charge fee(s) indicated below☐ Charge fee(s) indicated below, **except for the filing fee**☐ Charge any additional fee(s) or underpayments☒ Charge any underpayments or credit any overpayments

of fee(s) under 37 CFR 1.16 and 1.17

**Warning:** Information on this form may become public. Credit card information should not be included on this form. Provide credit card information and authorization on PTO-2038.**FEE CALCULATION****1. BASIC FILING, SEARCH, AND EXAMINATION FEES**

| Application Type | FILING FEES |                       | SEARCH FEES |                       | EXAMINATION FEES |                       | Fees Paid (\$) |
|------------------|-------------|-----------------------|-------------|-----------------------|------------------|-----------------------|----------------|
|                  | Fee (\$)    | Small Entity Fee (\$) | Fee (\$)    | Small Entity Fee (\$) | Fee (\$)         | Small Entity Fee (\$) |                |
| Utility          | 310         | 155                   | 510         | 255                   | 210              | 105                   | _____          |
| Design           | 210         | 105                   | 100         | 50                    | 130              | 65                    | _____          |
| Provisional      | 210         | 105                   | 0           | 0                     | 0                | 0                     | _____          |

**2. EXCESS CLAIM FEES**

| Fee Description                                    | Fee (\$) | Small Entity Fee (\$) |
|--|----------|-----------------------|
| Each claim over 20 (including Reissues)            | 50       | 25                    |
| Each independent claim over 3 (including Reissues) | 210      | 105                   |
| Multiple dependent claims                          | 370      | 185                   |

| Total Claims            | Extra Claims | Fee (\$) | Fee Paid (\$) | Multiple Dependent Claims |
|-------------------------|--------------|----------|---------------|---------------------------|
| _____ -20 or HP = _____ | X            | _____    | _____         | Fee (\$)                  |
|                         |              |          |               | Fee Paid (\$)             |

HP = highest number of total claims paid for, if greater than 20.

| Indep. Claims          | Extra Claims | Fee (\$) | Fee Paid (\$) |
|------------------------|--------------|----------|---------------|
| _____ -3 or HP = _____ | X            | _____    | _____         |

HP = highest number of independent claims paid for, if greater than 3.

**3. APPLICATION SIZE FEE**

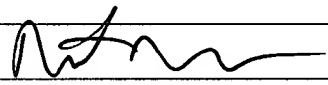
If the specification and drawings exceed 100 sheets of paper (excluding electronically filed sequence or computer listings under 37 CFR 1.52(e)), the application size fee due is \$260 (\$130 for small entity) for each additional 50 sheets or fraction thereof. See 35 U.S.C. 41(a)(1)(G) and 37 CFR 1.16(s).

| Total Sheets       | Extra Sheets | Number of each additional 50 or fraction thereof | Fee (\$) | Fee Paid (\$) |
|--------------------|--------------|--|----------|---------------|
| _____ -100 = _____ | /50 = _____  | (round up to a whole number) x _____             | _____    | _____         |

**4. OTHER FEE(S)**

Non-English Specification, \$130 fee (no small entity discount)

Other (e.g., late filing surcharge): Appeal Brief (\$500 previously paid)**10****SUBMITTED BY**

|                   |   |                                   |                 |           |              |
|-------------------|---|-----------------------------------|-----------------|-----------|--------------|
| Signature         |  | Registration No. (Attorney/Agent) | 33,514          | Telephone | 206-622-4900 |
| Name (Print/Type) | Robert Iannucci   | Date                              | October 9, 2007 |           |              |



PATENT

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Applicant : Giovanni Frezza  
 Application No. : 09/997,995  
 Filed : November 30, 2001  
 For : METHOD FOR FORMING A PROTECTIVE PACKAGE FOR  
 ELECTRONIC CIRCUITS

Examiner : Ori Nadav  
 Art Unit : 2811  
 Docket No. : 856063.722  
 Date : October 8, 2007

Mail Stop Appeal Brief - Patents  
 Commissioner for Patents  
 P.O. Box 1450  
 Alexandria, VA 22313-1450

### APPELLANT'S BRIEF

Commissioner for Patents:

This brief is in furtherance of the Notice of Appeal, filed in this case on August 7, 2007. The fees required under Section 1.17(c), and any required request for extension of time for filing this brief and fees therefor, are dealt with in the accompanying transmittal letter.

#### I. REAL PARTY IN INTEREST

STMicroelectronics S.r.l. is the assignee of the present application and is the real party in interest.

#### II. RELATED APPEALS AND INTERFERENCES

A previous Notice of Appeal was filed on August 28, 2006, an appeal brief was filed on October 30, 2006, and a corrected appeal brief was filed on January 8, 2007. In response, the Examiner reopened prosecution with an Office Action dated May 7, 2007. A second Notice of Appeal was filed on August 7 to open the present Appeal.

10/12/2007 EAYALEW1 00000040 191090 09997595

01 FC:1402 500.00 DA 10.00 OP

### III. STATUS OF CLAIMS

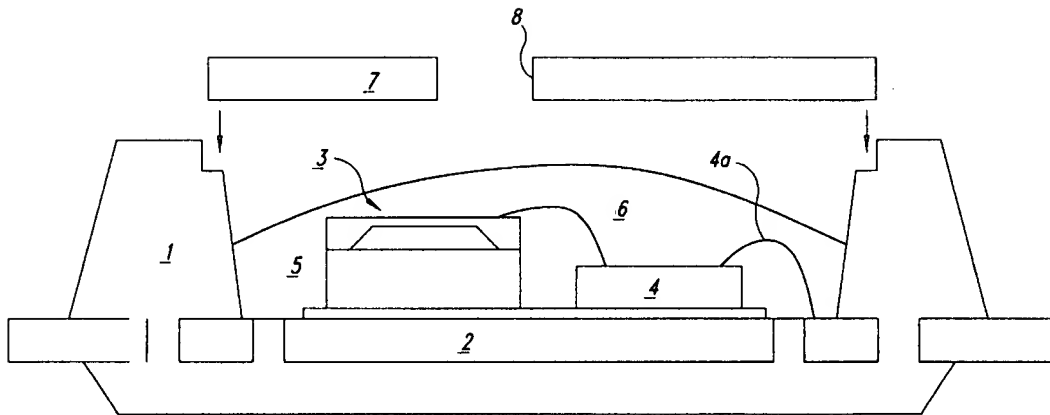
Claims 19, 21-22, 24, 27-29, 31-33, 36, and 40-43 are pending. Claims 19, 21-22, 24, 27-29, 31-33, 36, and 40-43 were rejected. Claims 1-18, 20, 23, 25-26, 30, 34-35, and 37-39 were canceled. Claims 19, 21-22, 24, 27-29, 31-33, 36, and 40-43 are being appealed.

### IV. STATUS OF AMENDMENTS

An amendment was filed on August 7, 2007 together with the Notice of Appeal. That amendment, which canceled claim 38, amended page 8 of the specification, and amended Figures 2A-2B and 7-8, was entered by the Examiner in an Office Communication dated August 28, 2007.

### V. SUMMARY OF CLAIMED SUBJECT MATTER

The invention relates to a plastic protective package for integrated electronic devices, the package being formed with a window so that the contained electronic devices can at least partially be accessed from the outside of the package. A prior art packaged electronic device is shown in Figure 1 of the application (reproduced below) and includes a package 1 and a support 2 for an integrated circuit. The integrated circuit includes a pressure sensor 3 and control circuitry 4 that are fixed on the support 2 by an adhesive layer 5. The sensor 3 and control circuitry 4 are covered with a coating gel 6 and the package 1 is closed by a closing element 7 with a window 8 aligned with the sensor 3. The prior art device shown in Figure 1 has some drawbacks in that, to complete the device, it is necessary firstly to form the package, insert the components into the package, seal the package, and insert the element or operating the sensor through the package window. Also with such devices, the procedure for aligning and positioning the window 8 to insert the element operating the sensor is troublesome, and this makes the device construction difficult to reproduce.



*FIG. 1*

One of the concepts behind embodiments of this invention is that of forming a package using a conventional molding technique, and provide it with a window aligned to a sensor housed inside the package, but in communication with the package exterior. After having fixed the sensor and a control circuit on a support, a surface of the sensor is covered with a covering layer made out of elastic material so as to form a projecting portion from the device surface. The support is inserted into a mold in such a way that the projecting portion abuts against the superior wall of the mold, when the mold is closed. The mold is then filled with an insulating material to form the package with its window in a single step. Advantageously, the mold contacts the projecting portion, such that a window, aligned with the sensor, is formed during molding of the package.

The invention includes at least two embodiments: one shown in Fig. 2B and one shown in Figure 8. The embodiment of Figure 2B (reproduced below) shows a ring-shaped dyke or barrier 52 surrounding an elastic projecting portion 51 over a sensor 30, such that the sensor 30 can be activated by exerting pressure on the projecting portion 51. The embodiment shown in Figure 8 (reproduced below) shows a ring-shaped projecting portion 51 that enables the sensor 30 to be activated through a central hole in the projecting portion 51.

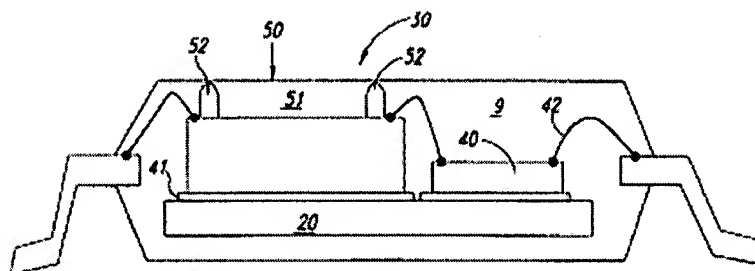


FIG. 2B

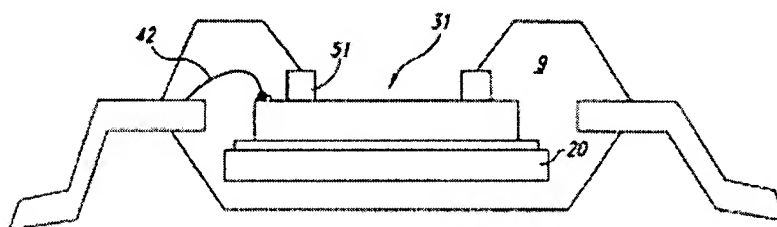


FIG. 8

The following shows exemplary claims 19 and 22 with reference numbers indicating those claims being read on Figures 8 and 2B, respectively. Of course, the reference numbers are exemplary only and are not intended to limit the claims only to the exact embodiments shown in Figures 8 and 2B.

19. A packaged electronic device ready for electronic use, comprising:

a semiconductor-integrated electronic circuit including a pressure sensor 30 (page 4, lines 2-3);

a plastic protective package 9 surrounding and supporting the electronic circuit, the protective package having a window 70 over the pressure sensor 30 of the electronic device (page 8, lines 1-5) such that the pressure sensor can be at least partially activated from outside of said protective package (page 5, lines 1-2; page 7, lines 11-15; Figs. 6 and 8; original claim 19); and

a projecting portion 51 of elastic material projecting from a surface of the electronic device into the window (page 7, lines 3-5), the projecting portion being structured to enable the pressure sensor to be activated through the projecting portion when the electronic

device is in use (page 8, lines 8-10), wherein said projecting portion is shaped to form a ring on the electronic circuit (page 7, lines 22-25).

22. A packaged electronic device ready for electronic use, comprising:  
a semiconductor-integrated electronic circuit 30 (page 4, lines 2-3);  
a plastic protective package 9 surrounding and supporting the electronic circuit, the protective package having a window 70 over a portion of the electronic device such that the electronic device can be at least partially activated from outside of said protective package (page 5, lines 1-2 and 11-13; page 7, lines 11-15; Figs. 2B and 6); and  
a projecting portion 51 of elastic material projecting from a surface of the electronic device into the window, the projecting portion being structured to enable the electronic device to be activated through the projecting portion when the electronic device is in use, wherein said projecting portion is surrounded by dyke or barrier 52 formed on a surface of the electronic circuit (original claim 22; page 4, lines 14-17; Fig. 2B)<sup>1</sup>.

27. A packaged electronic device ready for electronic use, comprising:  
a semiconductor-integrated electronic circuit including a pressure sensor 30 (page 4, lines 2-3);  
a plastic protective package 9 surrounding and supporting the electronic circuit, the protective package having a window 70 over the pressure sensor 9 (page 8, lines 1-5) such that the pressure sensor can be activated from outside of said protective package (page 5, lines 1-2; page 7, lines 11-15; Figs. 6 and 8; original claim 19); and  
an elastic protective layer 51 positioned in the window 70 (page 7, lines 3-5), the protective layer being structured to enable the pressure sensor to be activated through the protective layer when the electronic device is in use (page 8, lines 8-10), wherein the protective layer is shaped to form a ring on the electronic circuit (page 7, lines 22-25).

29. A packaged electronic device ready for electronic use, comprising:

---

<sup>1</sup> Note that page 4, lines 14-17 and Fig. 2B were amended in the Amendment filed on December 3, 2002. The Figure 2B reproduced above is the "as amended" version.

a semiconductor-integrated electronic circuit 30 (page 4, lines 2-3);

a plastic protective package 9 surrounding and supporting the electronic circuit, the protective package having a window 70 over a portion of the electronic device such that the electronic device can be activated from outside of said protective package (page 5, lines 1-2 and 11-13; page 7, lines 11-15; Figs. 2B and 6); and

an elastic protective layer 51 positioned in the window, the protective layer being structured to enable the electronic device to be activated through the protective layer when the electronic device is in use, wherein the protective layer is surrounded by dyke or barrier 52 formed on a surface of the electronic circuit (original claim 22; page 4, lines 14-17; Fig. 2B).

31. A packaged electronic device ready for electronic use, comprising:

a semiconductor-integrated electronic circuit 30 having a top, a bottom, and lateral sides extending between the top and bottom (page 4, lines 2-3);

an elastic protective layer 51 positioned on the circuit (page 4, lines 8-12), the protective layer being structured to enable the electronic device to be activated through the protective layer when the electronic device is in use (page 8, lines 8-10); and

a plastic protective package 9 in which the electronic circuit is embedded, the protective package supporting the electronic circuit and contacting the lateral sides of the electronic circuit, the protective package having a window 70 over a portion of the electronic circuit such that the electronic circuit can be activated from outside of said protective package (page 5, lines 1-2 and 11-13; page 7, lines 11-15; Figs. 2B and 6), wherein the protective layer is surrounded by dyke or barrier 52 formed on a surface of the electronic circuit (original claim 22; page 4, lines 14-17; Fig. 2B).

## VI. GROUND OF REJECTION TO BE REVIEWED ON APPEAL

Claims 33, 40, and 42 were rejected under 35 U.S.C. § 112, first paragraph, as failing to comply with the written description requirement.



Claims 33, 40, and 42 were rejected under 35 U.S.C. § 112, first paragraph, as failing to comply with the enablement requirement.

Claims 19, 21-22, 24, 27-29, 31-33, 36, and 40-43 were rejected under 35 U.S.C. § 103 as being unpatentable over U.S. Patent No. 5,105,262 to Grider in view of U.S. Patent No. 5,948,991 to Nomura et al. (“Nomura”).

Claims 19, 21-22, 24, 27-29, 31-33, 36, and 40-43 were rejected under 35 U.S.C. § 103 as being unpatentable over U.S. Patent No. 4,894,707 to Yamawaki et al. (“Yamawaki”) in view of Nomura.

## VII. ARGUMENT

### **A. *Written Description/Enablement***

To support the written description and enablement rejections, the Examiner bears the initial burden of establishing that the written description in the specification is inadequate to enable any person skilled in the art to make and use the invention. To establish a *prima facie* case of lack of enablement, the Examiner “bears the burden of setting forth a reasonable explanation as to why it believes that the scope of protection by that claim is not adequately enabled by the description of the invention provided in the specification of the application; this includes, of course, providing sufficient reasons for doubting any assertions in the specification as to the scope of enablement.” *In re Wright*, 999 F.2d 1557, 1561-1562 (Fed. Cir. 1993). Regarding written description, the Examiner must establish that the disclosure of the application does not reasonably convey to a person of ordinary skill in the art that the inventor had possession of the invention when the application was filed. *Vas-Cath, Inc. v. Mahurkar*, 935 F.2d 1555, 1563-1564 (Fed. Cir. 1991).

#### **1. *Written Description***

The Examiner has not established a *prima facie* case of lack of written description, because the Examiner has not provided any reasons in support of the rejection. Instead, the Examiner has merely stated his conclusion that “There is no support for a device comprising all the structural limitations of dependent claim 31, and a window being defined by

tapering walls that taper inwardly toward the electronic circuit, as recited in claim 33.” Similarly, the Examiner concluded that “There is no support for a device comprising all the structural limitations of dependent claims 22 and 29, and a window being defined by tapering walls that taper inwardly toward the electronic circuit, as recited in claims 40 and 42. Such conclusory statements merely quote from the claim and Section 112 without providing any reasons in support.

For the foregoing reasons, the Examiner has not established a prima facie case of lack of written description, and thus, the Section 112 rejections should be withdrawn.

The language of claims 33, 40, and 42 is supported by an adequate written description that enables one skilled in the art to make and use the invention. For example, claim 33 depends on claim 31, which is directed to a device that includes an electronic circuit, an elastic protective layer positioned on the circuit, a plastic protective package having a window over the circuit, and a dyke or barrier surrounding the protective layer. The Examiner apparently recognizes that these features are supported by an enabling written description as no written description rejection was made to claim 31 (see also the above discussion of claim 1 in the Summary of Claimed Subject Matter section). Claim 33 adds that the window is defined by tapering walls that taper inwardly toward the circuit.

The specification beginning at page 5, line 24 discusses the embodiments of Figures 4-8, which all include windows defined by tapering walls that taper inwardly toward an electronic circuit. For example, Figure 4 shows a protective package 9 with a window 70 having tapering walls. The specification, at page 6, lines 1-2, states: “Where the lug 13 is shaped as a truncated cone, the window 70 will show with tapering walls toward the sensor 30.” The specification goes on to describe how a covering layer 50 can be formed into a protective projecting portion 51 using a surrounding dyke. In particular, col. 6, lines 16-18 states, “Advantageously, a dyke, *e.g.*, ring-shaped, is formed on the top surface of the sensor 30. The covering layer 50 is then deposited inside this barrier provided by the dyke, the projecting portion 51 so formed being surrounded by the dyke indeed.” The covering layer 50 is also described as a protective layer at page 4, lines 18-19.

For at least the foregoing reasons, claim 33 is supported by an adequate written description.

Although the language of claims 40 and 42 is not identical to that of claim 33, the written description supporting those claims will be apparent in view of the above discussion.

## **2.     *Enablement***

The Examiner has not established a prima facie case of lack of enablement, because the Examiner has not provided any reasons in support of the rejection. Instead, the Examiner has merely stated his conclusion that “There is no support for a device comprising all the structural limitations of dependent claim 31, and a window being defined by tapering walls that taper inwardly toward the electronic circuit, as recited in claim 33.” Similarly, the Examiner concluded that “There is no support for a device comprising all the structural limitations of dependent claims 22 and 29, and a window being defined by tapering walls that taper inwardly toward the electronic circuit, as recited in claims 40 and 42. As with the lack of written description rejection, such conclusory statements merely quote from the claim and Section 112 without providing any reasons in support.

For the foregoing reasons, the Examiner has not established a prima facie case of lack of enablement, and thus, the Section 112 rejections should be withdrawn.

The language of claims 33, 40, and 42 is supported by an enabling disclosure. As discussed above, the specification explains that a window 70 with tapering walls toward the sensor 30 using a lug 13 that is shaped as a truncated cone (page 6, lines 1-2). Again as discussed above, the specification explains that the covering layer 50 can be deposited inside the barrier provided by the dyke, to form the projecting portion 51 surrounded by the dyke (page 6, lines 16-18). Such steps are well within the skill of the art of plastics packaging.

For the reasons expressed above, claim 33 is supported by an enabling disclosure with the meaning of 35 U.S.C. § 112, first paragraph.

Although the language of claims 40 and 42 is not identical to that of claim 33, the enabling disclosure supporting those claims will be apparent in view of the above discussion.

## **B. Nonobviousness**

The Federal Circuit has held many times that the Examiner must provide objective evidence of a motivation for combining the teachings of cited references in the manner claimed. E.g., *In re Sang-Su Lee*, 277 F.3d 1338, 1343; 61 USPQ2d 1430, 1433 (Fed. Cir. 2002) (copy enclosed). Further, “this factual question of motivation is material to patentability, and could not be resolved on subjective belief and unknown authority.” *Id.* at 277 F.3d 1343-1344; 61 USPQ2d 1433. The recent U.S. Supreme Court case, *KSR Int’l Co. v. Teleflex, Inc.*, does not change the requirement for an examiner to provide such evidence of motivation. 127 U.S. 1727, 1740-41 (U.S. 2007). The Supreme Court also stated that when the prior art teaches away from combining certain known elements, discovery of a successful means of combining them is more likely to be nonobvious. *Id.*, citing *United States v. Adams*, 383 U. S. 39, 40 (1966). In addition, the cited references must support all of the limitations of a claim in order to support a rejection based on obviousness. *In re Thrift and Hemphill*, 298 F.3d 1357, 1366 (Fed. Cir. 2002).

### **1. Grider and Nomura**

Claim 19 is nonobvious in view of Grider and Nomura. In particular, claim 19 recites a packaged electronic device that includes an electronic circuit with a pressure sensor, and ring-shaped, elastic projection portion that projects from a surface of the device into a window to enable the pressure sensor to be activated through the projection portion when the device is in use. Grider and Nomura do not teach or suggest such a ring-shaped, elastic projecting portion for a pressure sensor circuit.

Grider does not teach or suggest any elastic portion that projects from a surface of an electronic device. The Examiner points a top housing 13 as being an elastic projecting portion, but Grider does not suggest that the top housing 13 is elastic. In fact, Grider teaches away from using an elastic material for the top housing by stating that the housing means provides a pressure barrier (see claims 1-2). In addition, the top housing 13 does not project from a surface of the electronic device 32. Instead, as shown in Figures 7-8, the top housing 13 defines a cavity 40 directly above the entire device, and thus, no portion of the top housing 13 projects from the surface of the electronic device 32.

Nomura also does not teach or suggest a ring-shaped projecting portion that projects from a surface of an electronic device. Nomura shows a pressure-sensitive chip 130 with a gel-like protective member 132 that covers the entire top surface of the chip 130. Nothing suggests that the protective member 132 could or should be ring-shaped. Nomura reports that the function of the protective member 132 is to protect the chip 130. Changing the shape of the protective member 132 to a ring-shape would certainly greatly reduce if not completely eliminate the protective function of the protective member 132. It cannot be obvious to change Nomura's protective member in a way that would greatly reduce or eliminate its function. As stated in MPEP 2143.01(V), "If a proposed modification would render the prior art invention being modified unsatisfactory for its intended purpose, then there is no suggestion or motivation to make the proposed modification. *In re Gordon*, 733 F.2d 900, 221 USPQ 1125 (Fed. Cir. 1984)"

There is no motivation for combining Grider and Nomura in any way that would create the claimed invention. The Examiner suggests that one skilled in the art would be motivated to employ Nomura's plastic housing 122 in Grider's device. However, the only feasible way to employ Nomura's plastic housing 122 in Grider's device would be to replace Grider's top housing 13 with Nomura's housing 122. The resulting device still would not include any ring-shaped, elastic projecting portion projecting from a surface of the electronic device. Moreover, the Examiner has not provided any support for his assertion that one would be motivated to employ Nomura's plastic housing "to reduce the cost of making the device, to improve productivity, and to provide better protection to the chip." Nomura does not state that his plastic housing 122 provides any of those advantages.

The Examiner's assertion that the "process limitations of a protective package having a window over the electronic device and a projecting portion of elastic material projecting from a surface of the electronic device into the window" carry no patentable weight is both legally and factually wrong. First, the limitations quoted by the Examiner are certainly not process limitations. Instead, they simply describe the structure of a package having a window and an elastic portion projecting from a surface into a window. The phrase "projecting from a surface of an electronic device into a window" is simply an adjective phrase that describes the structure and position of the elastic projecting portion. The Examiner also notes that in Figure 2B

a window is sealed/closed with a projecting portion, but such “sealed/closed” language is not in claim 19.

Second, even if the limitations were process limitations, the Examiner is not entitled to give them no patentable weight. The only legal authority cited by the Examiner includes several cases involving “product by process” claims. It is hard to believe that the Examiner seriously considers claim 19 to be a product by process claim. The claim includes numerous structural features without ever stating how the device is made. Also, the cited cases merely stand for the rule that one must determine the patentability of the final product in a product by process claim. The final product in claim 19 has an elastic projecting portion projecting from a surface into a window regardless of how the projecting portion was made.

For the foregoing reasons, claim 19 is nonobvious in view of Grider and Nomura.

Claims 21 and 24 depend on claim 19, and thus, are also nonobvious.

Although the language of claim 27 differs from that of claim 19, the allowability of claim 27 will be apparent in view of the above discussion.

Grider and Nomura do not teach or suggest the invention recited in claim 22. Claim 22 recites that the device includes an elastic projecting portion projecting from a surface of an electronic device into a window of a plastic package and being surrounded by dyke or barrier formed on a surface of the electronic circuit. As discussed above, Grider does not even teach or suggest an elastic projection portion, so it cannot possibly suggest a dyke or barrier surrounding such an elastic projection portion. Nomura shows a gel-like protective member 132, but the protective member 132 is not surrounded by any dyke or barrier. The Examiner merely asserts that Grider discloses such a dyke or barrier, but provides no support for such an assertion.

In addition, as discussed above, there is no motivation to combine Grider and Nomura as suggested by the Examiner. The only feasible way to employ Nomura’s plastic housing 122 in Grider’s device would be to replace Grider’s top housing 13 with Nomura’s housing 122. The resulting device still would not include any dyke or barrier surrounding an elastic projection portion projecting from a surface of the electronic device.

In addition, the Examiner has not provided any support for his assertion that one would be motivated to employ Nomura’s plastic housing “to reduce the cost of making the device, to improve productivity, and to provide better protection to the chip.” Adding Nomura’s

plastic housing 122 over Grider's entire device would certainly add to the cost of making the device, and would not improve productivity. It probably would provide better protection, but so would a concrete vault. That alone would not provide a motivation for providing an additional plastic housing like that of Nomura because there is nothing suggesting that Grider's top housing 13 provides insufficient protection, and there is no evidence that one skilled in the art would desire to incur the extra cost and the increased size to put Nomura's plastic housing 122 on top of Grider's top housing 13.

For the foregoing reasons, claim 22 is nonobvious in view of Grider and Nomura.

Claims 41-42 depend on claim 22, and thus, are also nonobvious.

Although the language of claims 29, 31-33, 36, and 40-42 differs from that of claim 22, the allowability of claims 29, 31-33, 36, and 40-42 will be apparent in view of the above discussion.

## **2. *Yamawaki and Nomura***

Yamawaki and Nomura do not teach or suggest the invention recited in claim 19, as amended. As discussed above, claim 19 recites a packaged electronic device that includes an electronic circuit with a pressure sensor, and ring-shaped, elastic projection portion that projects from a surface of the device into a window to enable the pressure sensor to be activated through the projection portion when the device is in use. Yamawaki and Nomura do not teach or suggest such a ring-shaped projecting portion for a pressure sensor circuit.

There is no motivation in the prior art for combining Yamawaki and Nomura to create the claimed invention. Nomura shows a pressure-sensitive chip 130 with a gel-like protective member 132 covering the entire top of the chip 130 (Fig. 6). Yamawaki shows an image sensor 1, a glass window pane 2, 12, and an enclosed wall 3 that extends between the image sensor and the glass window (Fig. 2g). The reason that the wall 3 is ring-shaped is obvious: to allow the image sensor an unobstructed view through the space that is enclosed by the wall 3. Such an unobstructed view is irrelevant for a pressure sensor like the chip 130 of

Nomura. Thus, the prior art does not provide any motivation for adding the pressure-sensitive chip 130 of Nomura to a ring shape like the wall 3 of Yamawaki.

The applicants respectfully disagree with the motivation given by the Examiner for combining Yamawaki with Nomura. The Examiner states that it would have been obvious to replace the optical device 1 of Yamawaki with the pressure-sensitive chip 130 of Nomura in order to use the device in an application that requires a pressure sensor chip. This is incorrect for several reasons. First, the Yamawaki device includes a rigid glass window pane 12 that would prevent proper operation of the device if the optical device 1 of Yamawaki were replaced with the pressure-sensitive chip 130 of Nomura. That is, the rigidity of the glass window pane 12 and the empty space between the window pane 12 and the device 1 of Yamawaki, would not allow any pressure to reach the device 1, assuming that the device 1 were replaced with the pressure-sensitive chip 130 of Nomura. Nothing in Yamawaki or Nomura would motivate one to remove the glass window pane 12 because Nomura teaches one to always protect the pressure-sensitive chip from contamination.

Second, even if would could modify Yamawaki with Nomura, the case law and the MPEP make clear that the mere fact that references can be combined or modified is not sufficient to establish obviousness. As stated in MPEP 2143.01(III), “the mere fact that references can be combined or modified does not render the resultant combination obvious unless the prior art also suggests the desirability of the combination. *In re Mills*, 916 F.2d 680, 16 USPQ2d 1430 (Fed. Cir. 1990). Nothing in the prior art suggests the desirability of replacing the Yamawaki optical chip 1 with the Nomura pressure-sensitive chip 130. The Examiner does not explain why, if faced with an application that requires a pressure sensor chip, one would not simply use the entire Nomura pressure sensor device rather than trying to modify the Yamawaki optical device to become a pressure sensor.

Third, the Examiner’s proposed change to the Yamawaki device would improperly render the Yamawaki device unsatisfactory for its intended purpose. As stated in MPEP 2143.01(V), “If a proposed modification would render the prior art invention being modified unsatisfactory for its intended purpose, then there is no suggestion or motivation to make the proposed modification. *In re Gordon*, 733 F.2d 900, 221 USPQ 1125 (Fed. Cir. 1984)” The proposed modification of Yamawaki to replace the optical chip 1 with the pressure-sensitive



chip 130 of Nomura would improperly render the Yamawaki device unsatisfactory for its intended purpose as an optical device.

For the foregoing reasons, claim 19 is nonobvious in view of Yamawaki and Nomura. Claims 21 and 24 depend on claim 19, and thus, are also nonobvious.

Although the language of claim 27 differs from that of claim 19, the allowability of claim 27 will be apparent in view of the above discussion.

Yamawaki and Nomura do not teach or suggest the invention recited in claim 22. Claim 22 recites that the device includes a dyke or barrier that surrounds an elastic projection portion and is formed on a surface of an electronic circuit. The Examiner asserts that the wall 3 of Yamawaki is such a dyke or barrier, the elastic material 132 of Nomura is a projecting portion, and the combination of them would create the invention. The motivation provided by the Examiner is that the elastic material 132 would provide better protection for the chip.

Regardless of whether there would have been a motivation for combining Yamawaki and Nomura, the resulting device would not satisfy the language of claim 22 for several reasons. First, the combination of Yamawaki and Nomura would not include a dyke or barrier that surrounds an elastic projection portion. Instead, the protective member 132 of Nomura extends across the entire top surface of the device 130 while the elastic wall 3 of Yamawaki is positioned interiorly of the edges of the device 1. As such, the protective member 132 would completely cover the elastic wall 3 on three sides, and thus, the elastic wall 3 would not surround the protective member 132.

Second, the prior art does not provide any suggestion to use both the elastic wall 3 of Yamawaki and the protective member 132 of Nomura rather than replacing the elastic wall 3 with the protective member 132 or replacing the protective member 132 with the elastic wall 3. The only reasons mentioned by Yamawaki for the elastic wall 3, to protect the device 1 during molding and to support the glass layer 2, are not applicable to any device that incorporates the protective member 132 of Nomura, and thus, there is no reason in the prior art to include both the elastic wall 3 and the protective member 132. Only an improper hindsight reconstruction based on the applicants' disclosure provides such a suggestion.

Third, there is no suggestion that the elastic material of Nomura could or should be used to provide better protection to the Yamawaki device. The glass window pane 12 of

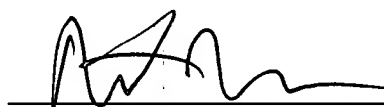
Yamawaki already closes the opening in the resin package 9, so there is no need to add the elastic material 132 of Nomura to the Yamawaki device. Certainly, neither Yamawaki nor Nomura suggests such a “belt and suspenders” approach. In addition, Nomura does not teach or suggest that the elastic material 132 is transparent at all, let alone transparent enough to be incorporated into the optical device of Yamawaki, and thus, one would not be motivated to use the Nomura elastic material instead of, or in addition to, the glass window pane 12 of Yamawaki.

The applicants submit that the Examiner is improperly using hindsight, based on the applicants disclosure, to pick and choose from the prior art, to obtain the claimed invention. To obtain the claimed invention from Yamawaki and Nomura, one would need to 1) replace the Yamawaki optical device 1 with the Nomura pressure sensor 130; 2) choose to add the Nomura protective member 132; 3) shrink the Nomura protective member 132 to fit within the Yamawaki ring-shaped wall 3; and 4) remove the rigid glass pane 12 of Yamawaki. There no motivation in the prior art to do all of those things or an explanation of how to accomplish them.

For the foregoing reasons, claim 22 is nonobvious in view of the cited prior art.

Although the language of claims 29, 31-33, 36, and 38 differs from that of claim 22, the allowability of claims 29, 31-33, 36, and 38 will be apparent in view of the above discussion.

Respectfully submitted,  
Seed Intellectual Property Law Group PLLC



---

Robert Iannucci  
Registration No. 33,514

RXI:vsj

701 Fifth Avenue, Suite 5400  
Seattle, Washington 98104  
Phone: (206) 622-4900  
Fax: (206) 682-6031

1037521\_1.DOC

## VIII. CLAIMS APPENDIX

19. A packaged electronic device ready for electronic use, comprising:  
a semiconductor-integrated electronic circuit including a pressure sensor;  
a plastic protective package surrounding and supporting the electronic circuit, the protective package having a window over the pressure sensor of the electronic device such that the pressure sensor can be at least partially activated from outside of said protective package; and  
a projecting portion of elastic material projecting from a surface of the electronic device into the window, the projecting portion being structured to enable the pressure sensor to be activated through the projecting portion when the electronic device is in use, wherein said projecting portion is shaped to form a ring on the electronic circuit.

21. The packaged electronic device according to claim 19 wherein said window has tapering walls toward said electronic circuit.

22. A packaged electronic device ready for electronic use, comprising:  
a semiconductor-integrated electronic circuit;  
a plastic protective package surrounding and supporting the electronic circuit, the protective package having a window over a portion of the electronic device such that the electronic device can be at least partially activated from outside of said protective package; and  
a projecting portion of elastic material projecting from a surface of the electronic device into the window, the projecting portion being structured to enable the electronic device to be activated through the projecting portion when the electronic device is in use, wherein said projecting portion is surrounded by dyke or barrier formed on a surface of the electronic circuit.

24. The packaged electronic device of claim 19 wherein the electronic circuit includes a proximity sensor.

27. A packaged electronic device ready for electronic use, comprising:

a semiconductor-integrated electronic circuit including a pressure sensor;  
a plastic protective package surrounding and supporting the electronic circuit, the protective package having a window over the pressure sensor such that the pressure sensor can be activated from outside of said protective package; and  
an elastic protective layer positioned in the window, the protective layer being structured to enable the pressure sensor to be activated through the protective layer when the electronic device is in use, wherein the protective layer is shaped to form a ring on the electronic circuit.

28. The packaged electronic device of claim 27 wherein the window has walls tapering toward said electronic circuit.

29. A packaged electronic device ready for electronic use, comprising:  
a semiconductor-integrated electronic circuit;  
a plastic protective package surrounding and supporting the electronic circuit, the protective package having a window over a portion of the electronic device such that the electronic device can be activated from outside of said protective package; and  
an elastic protective layer positioned in the window, the protective layer being structured to enable the electronic device to be activated through the protective layer when the electronic device is in use, wherein the protective layer is surrounded by dyke or barrier formed on a surface of the electronic circuit.

31. A packaged electronic device ready for electronic use, comprising:  
a semiconductor-integrated electronic circuit having a top, a bottom, and lateral sides extending between the top and bottom;  
an elastic protective layer positioned on the circuit, the protective layer being structured to enable the electronic device to be activated through the protective layer when the electronic device is in use; and  
a plastic protective package in which the electronic circuit is embedded, the protective package supporting the electronic circuit and contacting the lateral sides of the

electronic circuit, the protective package having a window over a portion of the electronic circuit such that the electronic circuit can be activated from outside of said protective package, wherein the protective layer is surrounded by dyke or barrier formed on a surface of the electronic circuit.

32. The device of claim 31 wherein the protective package also contacts the top of the electronic circuit adjacent to the window.

33. The device of claim 31 wherein the window is define by tapering walls that taper inwardly toward said electronic circuit.

36. The device of claim 31 wherein the electronic circuit includes a proximity sensor.

38. The device of claim 31 wherein the protective layer is shaped to form a ring on the electronic circuit.

40. The device of claim 22 wherein the window is defined by tapering walls that taper inwardly toward said electronic circuit.

41. The device of claim 22 wherein the electronic circuit includes a proximity sensor.

42. The device of claim 29 wherein the window is defined by tapering walls that taper inwardly toward said electronic circuit.

43. The device of claim 29 wherein the electronic circuit includes a proximity sensor.

IX. EVIDENCE APPENDIX

None.

X. RELATED PROCEEDINGS APPENDIX

None.